

MARINE CORPS WARFIGHTING LABORATORY

Transportable Transponder Landing System (TTLS) provides a rapidly deployable (HMMWV mounted or smaller), all weather, precision, terminal air traffic control capability—to be employed under instrument flight rules (IFR) conditions.

Background: During April 2001, the Marine Air Board identified a requirement for a non-emitting precision approach landing capability. Such a system would be used to provide an initial tactical precision approach capability with reduced footprint and electronic signature.

NavAir (PMA213) and Advanced Navigation and Positioning Corporation (ANPC) used fiscal year 2002 funding to begin development and testing modifications the commercial Transponder Landing System to meet the needs of the Marine Corps. The fiscal year 2003 funding was used to further develop and test unique capabilities in support of expeditionary maneuver warfare (EMW). These include multiple aircraft tracking and guidance, reciprocal approaches, and 360-degree tracking and control. The fiscal year 2004 funding was used to fine tune system design, system miniaturization, and system testing. FY05 funds will be used to make software and hardware improvements as well as an interoperability demonstration.

Description: The TTLS can be packed into a single C-130 aircraft, driven off and rapidly employed to provide category I guidance to both military and civilian aircraft. In addition to the ILS-emulation capability, the TTLS also presents a precision approach radar (PAR) display to the operator enabling ground-controlled approaches (GCA). With a single system, pilots can be guided to safe landings whether they are ILS-capable or not.

Specifications:

- Provide MEU commander with all weather, precision approach air traffic control system for shore-based aviation - in one HMMWV and trailer.

TRANSPORTABLE TRANSPONDER LANDING SYSTEM

fact sheet



- Precision aircraft tracking system
- ILS emulated guidance
- CAT I precision approach at austere fields
- No new equipment required onboard aircraft
- Rapid deployment

Deliverable Product: The next deliverable will be a Rhino II prototype system with miniaturized computer components followed by an interrogation trade study and flight demonstration and testing in Spring 2005.

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